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EXAMINER

BOBISH, CHRISTOPHER S

ART UNIT	PAPER NUMBER
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3746

NOTIFICATION DATE	DELIVERY MODE
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11/14/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
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Office Action Summary	Application No. 10/550,225	Applicant(s) BEG ET AL.	
	Examiner CHRISTOPHER BOBISH	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/20/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 10, 12, 17-19, 21, 23-25, 30, 32, 33, 37-39 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarshar (WO 95074414).

Sarshar teaches:

limitations from claims 1 and 23, a system for pumping multiphase fluids, the system including comprising:

a phase separator, **FIG. 3 (41, 42) Page 4 Line 12**, that is connected to receive an LP multiphase fluid, and is constructed and arranged to separate an LP gas phase and a LP liquid phase from the LP multiphase fluid, **Page 4 Lines 11-27**;

a gas-gas jet pump, **FIG. 3 (32) Page 4 Lines 19-20**, having an LP inlet connected to receive the LP gas phase, **FIG. 3 (42G) Page 4 Lines 21-22**, from the phase separator, a HP inlet connected to receive a HP gas supply, **FIG. 3 (41G) Page 4 Lines 20-21**, from a sustainable gas source, and an outlet for providing outlet gas, **FIG. 3 (43G) Page 4 Line 24**, at a pressure higher than that of the LP gas phase;

and a liquid pump, **FIG. 3 (31) Page 4 Lines 13-14**, having an LP inlet, **FIG. 3 (42L) Page 4 Line 16**, connected to receive the LP liquid phase from the phase separator, and an outlet for providing outlet liquid at a pressure higher than that of the LP liquid phase, **the combination of a high pressure fluid and a low pressure fluid is known to produce a mixed fluid at a higher pressure than the low pressure fluid**;

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wherein the sustainable gas source has a pressure in the range 50-150 bar;

Sarshar teaches that the sustainable gas source used to power the pump of his invention is gained from a production well. It is and would have been obvious to one having ordinary skill in the art that wells of this type are capable of meeting pressures within this range.

Sarshar discloses the pumping system of claim 1 except for the range of range of pressure of the sustainable gas source. It would have been obvious to one having ordinary skill in the art of pumping systems (particularly jet pumps and wells) at the time of the invention to choose a value to best suit the system and its efficiency, including one from within this range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

limitations from claims 2, 24 and 25, wherein the sustainable gas source comprises a supply of lift gas or export gas, **Page 4 Lines 12-13 and Lines 19-21, lift gas is a common motive fluid for jet pumps in down hole wells and would be an obvious substitute for export gas;**

limitations from claims 10 and 30, wherein the liquid pump is a liquid-liquid jet pump having a LP inlet, **FIG. 3 (42L) Page 4 Line 16**, connected to receive the LP liquid phase from the phase separator, a HP inlet, **FIG. 3 (41L) Page 4 Lines 14-16**, connected to receive a HP liquid supply from a sustainable liquid source, and an outlet, **FIG. 3 (43L) Page 4 Lines 17-18**, for providing outlet liquid at a pressure higher than that of the LP liquid phase, **the combination of a high pressure fluid and a low pressure fluid is known to produce a mixed fluid at a higher pressure than the low pressure fluid;**

limitations from claims 12 and 32, wherein the sustainable liquid source comprises a supply of export oil, **Page 4 Lines 12-15;**

limitations from claims 17 and 37, wherein the separator is a cyclone type separator, **Page 2 Lines 23-33 teach a separator that functions as a cyclone separator;**

limitations from claims 18 and 38, a mixing device, **FIG. 3 (43) Page 4 Lines 18 and 24**, connected to the outlets of the jet pump and the liquid pump, for combining the outlet gas and the outlet liquid and providing a combined multiphase outlet fluid at a pressure higher than that of the LP multiphase fluid, **Page 4 Lines 11-27;**

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limitations from claims 19 and 39, wherein the mixing device is a commingler,
Page 4 Lines 17-24;

limitations from claims 21 and 41, wherein the multiphase fluid is a petroleum gas/oil mixture, **Page 1 Lines 9-11;**

limitations from claims 5, 6, 13, 14, 20, 22, 26, 27, 33, 34, 40 and 42, wherein the HP gas pressure, jet pump outlet pressure and oil/gas mixture ratio are within certain limits;

Sarshar discloses the pumping system of claims 1 and 10 except for the ranges of the values claimed for the system characteristics listed above. It would have been obvious to one having ordinary skill in the art of pumping systems (particularly jet pumps) at the time of the invention to choose a value to best suit the system and its efficiency, including one from within these ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarshar (WO 95074414) as applied to claims 1-2, 10, 12, 17-19, 21 above, and in further view of Ackermann et al (US Patent No. 4,762,467).

Sarshar discloses and teaches of the system of claim 1.

Sarshar does not teach that steam is a source of HP motive fluid, but Ackermann does.

Ackermann teaches:

limitations from claim 3, wherein a sustainable gas source for a jet pump is steam, **C. 1 Lines 12-27;**

It would have been obvious to one having ordinary skill in the art of jet pumps at the time of the invention to use steam as a motive fluid as in the method taught by Ackermann for driving a jet pump in a system as taught by Sarshar. It is common in the art to use many fluids, including steam, to drive jet pump and it would be obvious to choose from one of the known motive fluids. It would have been obvious to provide steam from any available source convenient to the systems location and purpose.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarshar (WO 95074414) as applied to claims 1-2, 10, 12, 17-19, 21 above, and in further view of Wiltshire et al (GB 2 239 676).

Sarshar discloses and teaches of the system of claim 1.

Sarshar does not teach a compressor providing a HP source, but Wiltshire does.

Wiltshire teaches:

limitations from claim 4, a compressor, **FIG. 2 (16)**, providing a sustainable HP gas source to a jet pump, **FIG. 2 (17) Page 2 Lines 14-21**;

Examiner acknowledges that the jet pump taught by Wiltshire is a liquid-gas jet pump, however it would have been obvious to one of ordinary skill in the art of pumps at the time of the invention that the method of using a compressor to provide a HP gas source in a jet pump, as taught by Wiltshire, could be combined with a gas-gas jet pump as well, to provide a reliable motive force.

Claims 11 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarshar (WO 95074414) as applied to claims 1-2, 10, 12, 17-19, 21 and 23 above, and in further view of Appleford et al (US PGPUB 2004/0154794).

Sarshar discloses and teaches of the system of claims 1, 10 and 23.

Sarshar does not teach that a sustainable liquid source comprises injection water, but Appleford does.

Appleford teaches:

limitations from claims 11 and 31, a jet pump, having injected water as its sustainable liquid source, **Page 1 paragraph [0005]**;

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It would have been obvious to one having ordinary skill in the art of jet pumps at the time of the invention to drive a jet pump with any convenient and available source of motive fluid, including water as taught by Appleford, in order to remove fluid from a production well, as in the system taught by Sarshar.

Claims 7, 8 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarshar (WO 95074414) as applied to claims 1-2, 10, 12, 17-19, 21 and 23 above, and in further view of Cholet et al (US Patent No. 4,718,824).

Sarshar discloses and teaches of the system of claims 1 and 23.

Sarshar does not teach that the fluid pump is a positive displacement mechanical pump, but Cholet does.

Cholet teaches:

limitations from claims 7, 8 and 28, a positive displacement mechanical pump for pumping fluid removed from a production well, **C. 2 Lines 5-15, a rotary pump is a positive displacement pump;**

It would have been obvious to one having ordinary skill in the art of well pumping systems at the time of the invention pump an oil fluid with any convenient and available pump, including a rotary pump as taught by Cholet, in order to pump fluid that was removed from a production well, as in the system taught by Sarshar.

Claims 9 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarshar (WO 95074414) as applied to claims 1, 7, 23 and 28 above, and in further view of Cholet et al (US Patent No. 4,718,824).

limitations from claims 9 and 29, wherein the liquid pump is within a certain pressure range;

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Sarshar discloses the pumping system of claims 1 and 7 except for the ranges of the values claimed for the system characteristics listed above. It would have been obvious to one having ordinary skill in the art of pumping systems (particularly jet pumps) at the time of the invention to choose a value to best suit the system and its efficiency, including one from within these ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claims 15, 16, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarshar (WO 95074414) as applied to claims 1-2, 10, 12, 17-19, 21 and 23 above, and in further view of Talley (US Patent No. 3,590,919).

Sarshar discloses and teaches of the system of claims 1 and 23.

Sarshar does not teach a knockout tank, but Talley does.

Talley teaches:

limitations from claims 15, 16, 35 and 36, a knockout tank, **FIG. 2 (38)**, for removing a liquid from a gas, **C. 3 Lines 45- 68**, having a liquid outlet connected to deliver removed liquid to a liquid pump, **the knockout tank is provided with an outlet for both water (40) and/or oil (46); while Talley does not discuss a pump, it is obvious that a pump could and most likely would be attached to the outlet lines to move the fluid to its destination, C. 3 Lines 50-57.**

It would have been obvious to one having ordinary skill in the art of pumping systems at the time of the invention to provide the system taught by Sarshar with a knockout tank to further isolate the liquid and gas portions of the mixed well fluids, as single phase jet pumps have been found to be more efficient

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER BOBISH whose telephone number is (571)270-5289. The examiner can normally be reached on Monday through Thursday, 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571)272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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